

We claim:

- 5 1. A data storage medium comprising:
a first layer;
a second layer including a polymer, the second layer exhibiting surface variations;
and
a third layer substantially conforming to the surface variations of the second layer.
- 10 2. The data storage medium as describe in claim 1, wherein the first layer is a substrate.
3. The data storage medium as described in claim 1, wherein the first layer is a disk.
- 15 4. The data storage medium as described in claim 1, wherein the first layer provides rigidity and mechanical stability to the article.
- 20 5. The data storage medium as described in claim 1, wherein the first layer is comprised of one of the following: glass, aluminum, aluminum-magnesium alloy, ceramic and plastic.
- 25 6. The data storage medium as described in claim 1, wherein the polymer includes a photopolymerized material.
7. The data storage media as described in claim 6, wherein the polymer comprises at least 30% by weight of radiation polymerized components selected from epoxy-terminated silanes.
- 30 8. The data storage medium as described in claim 1, wherein the surface variations are machine-readable data patterns.

9. The data storage medium as described in claim 8, wherein the data patterns include data bumps.

5 10. The data storage medium as described in claim 9, wherein at least some of the data bumps comprise encoded data.

11. The data storage medium as described in claim 1, wherein the surface variations are protrusions.

10 12. The data storage medium as described in claim 11, wherein the surface variations include at least one of the following: bumps, rails, lands and ridges

13. The data storage medium as described in claim 1, wherein the surface variations are depressions.

15 14. The data storage medium as described in claim 13, wherein the surface variations include at least one of the following: pits, grooves, and channels.

20 15. The data storage medium as described in claim 1, wherein the surface variations contain servo patterns.

16. The data storage medium as described in claim 1, wherein the surface variations contain tracking patterns.

25 17. The data storage medium as described in claim 1, wherein the surface variations project from the article a height less than 50 nanometers.

30 18. The data storage medium as described in claim 1, wherein the third layer includes a magnetic recording material.

19. The data storage medium as described in claim 1, wherein the third layer includes an optical recording material.

20. The data storage medium as described in claim 1, wherein the third layer includes a thin film stack.

21. The data storage medium as described in claim 1, wherein the third layer includes a hard coat.

22. The data storage medium as described in claim 21, wherein the hard coat includes at least one of the following: carbon, nitrogenated-carbon, and hydrogenated-carbon.

23. The data storage medium as described in claim 1, wherein the third layer includes a buffer.

24. The data storage medium as described in claim 1, further comprising a fourth layer substantially conforming to the surface variations of the second layer.

25. The data storage medium as in claim 24, wherein the fourth layer includes a lubricating material.

26. The data storage medium as in claim 1, wherein at least one medium surface is flyable.

27. A data storage medium comprising:
a substantially rigid substrate,
a polymer containing surface variations;
a thin film stack substantially conforming to the surface variations; and
a lubrication layer substantially conforming to the surface variations,
wherein the surface variations are arranged in a machine-readable pattern.

28. A data storage medium comprising:
a flexible contact media substrate;
a polymer containing surface variations; and
a thin film stack substantially conforming to the surface variations; and
a lubrication layer substantially conforming to the surface variations,
wherein the surface variations are arranged in a machine-readable pattern.

29. A data storage medium comprising:
a substantially transparent plastic substrate;
a reflective layer;
a polymer containing surface variations;
a thin film stack substantially conforming to the surface variations; and
a lubrication layer substantially conforming to the surface variations,
wherein the surface variations are arranged in a machine-readable pattern.

30. A data storage medium comprising:
a first data storage layer;
a second data storage layer, the second data storage layer including a polymer
containing surface variations;
a thin film stack substantially conforming to the surface variations; and
a lubrication layer substantially conforming to the surface variations,
wherein the surface variations are arranged in a machine-readable pattern.

31. A removable hard disk unit comprising:
a housing; and
a data storage unit within the housing comprising:
a first layer;
a second layer including a polymer, the second layer exhibiting
surface variations; and
a third layer substantially conforming to the surface variations of
the second layer.

32. A system comprising:

a housing;

a flying head transducer within the housing; and

a data storage unit within the housing comprising:

a first layer;

a second layer including a polymer, the second layer exhibiting surface variations; and

a third layer substantially conforming to the surface variations of the second layer.

33. A method comprising:

providing a substrate;

applying a polymer film on the substrate;

creating one or more surface variations on the film;

applying an additional layer over the film such that the additional layer substantially conforms to the surface variations.

34. The method of claim 33, further comprising applying a plurality of additional layers over the film such that the plurality of additional layers substantially conform to the surface variations.

35. The method of claim 33, wherein applying a film on the substrate comprises spin coating the substrate.

36. The method of claim 33, wherein applying a film on the substrate comprises roll coating the substrate.

37. The method of claim 33, wherein creating one or more surface variations comprises stamping the film with a stamper.

38. The method of claim 33, wherein applying a film on the substrate and creating the one or more surface variations comprises a reaction injection molding process.

5 39. The method of claim 33, wherein applying a film on the substrate and creating the one or more surface variations comprises a rolling bead process.

40. The method of claim 33, wherein the polymer film comprises less than 1% solvent.

10 41. The method of claim 33, wherein the polymer film comprises at least 30% ambifunctional silanes.

42. The method of claim 33, wherein the polymer film comprises at least 15% heterocyclic acryloyloxy materials.

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43. The method of claim 33 wherein the polymer film comprises 30% to 70% hydantoin hexacrylate.